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Andrea DeCecchis  
Type or print name

Andrea DeCecchis  
Signature

2/11/09  
Date

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE PCT NATIONAL STAGE APPLICATION OF  
HUGO CAMENZIND ET AL  
INTERNATIONAL APPLICATION NO. PCT/EP 03/10115  
FILED: SEPTEMBER 11, 2003  
FOR: SUCCINIC ACID SEMI-AMIDES AS ANTI-  
CORROSIVE AGENTS  
U.S. APPLICATION NO: 10/526,694  
35 USC 371 DATE: MARCH 3, 2005

Group Art Unit: 1797  
Examiner: James C. Goloboy

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL LETTER**

Sir:

Enclosed herewith are three copies of the Appeal Brief in the above-identified application.

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Respectfully submitted,

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CASE LA/1-22745/A/PCT

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Commissioner for Patents  
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Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

This appeal is from the final rejection mailed from the PTO on September 17 2008.

A Notice of Appeal was mailed on December 11, 2008 .

Mailing of this Appeal Brief is timely and accompanied by the requisite fee under 41.20.

The Commissioner is authorized to charge any fee due, or credit any overcharge, as a result of this Amendment to Deposit Account No. 03-1935.

02/18/2009 CEHAU1 00000027 031935 10526694

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### (1) REAL PARTY OF INTEREST

The real party of interest, by virtue of an assignment recorded in the United States Patent and Trademark Office on September 2, 2005 reel/frame 016944/0774 is:

Ciba Specialty Chemicals Corporation (now Ciba Corp.)  
P.O. Box 2005  
540 White Plains Road  
Tarrytown, New York 10591

### (2) RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any related appeals and interferences for the above application.

### (3) STATUS OF THE CLAIMS

Claims 1-3 are cancelled. Claims 4-8 are pending. Claims 4-8 are rejected.  
Claims 4-8 are being appealed.

### (4) STATUS OF AMENDMENTS

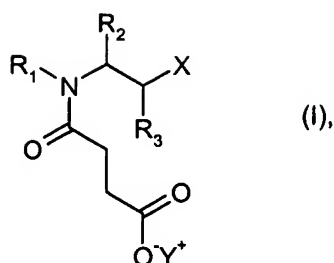
The claims now stand on Appeal as amended on November 13, 2008. The amendment of November 13, 2008 was submitted after Final Rejection. Examiner entered the amendments at that time for purposes of Appeal in the Advisory Action mailed on December 8, 2008.

This brings up to date the status of the claims. A clean copy of the claims is attached in the (8) Claims Appendix.

### (5) SUMMARY OF THE CLAIMED SUBJECT MATTER

Claim 4 is the only independent claim and is directed to a composition comprising

a) At least one compound (I),

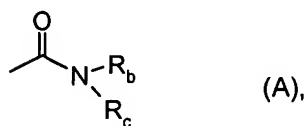


wherein

R<sub>1</sub> is a substituent selected from the group consisting of C<sub>1</sub>-C<sub>22</sub>alkyl, C<sub>3</sub>-C<sub>22</sub>alkyl interrupted by -O-, phenyl, and benzyl;

R<sub>2</sub> and R<sub>3</sub> are hydrogen;

X is derivatised carboxy selected from the group consisting of cyano, carboxy esterified by C<sub>1</sub>-C<sub>22</sub>alkyl, carboxy esterified by C<sub>3</sub>-C<sub>22</sub>alkyl interrupted by -O- , and carbamoyl of the partial formula (A)



defined as piperidinocarbonyl, piperazinylcarbonyl or morpholinocarbonyl; and

Y<sup>+</sup> is a hydrogen ion, ammonium, (C<sub>1</sub>-C<sub>4</sub>alkyl)<sub>1-4</sub> ammonium or (2 hydroxyethyl)<sub>1-4</sub> ammonium;

and

b) A base oil of lubricating viscosity.

The Markush for formula (I) may be found on page 1, last line and formula (A) on page 2, line 18 in the disclosure. The defined substituents above are supported on page 4, lines 1-12.

The compounds represented by the formula (I) above are prepared as taught at the bottom of page 4 through the first paragraph of page 5, for example by the addition of a primary amine R<sub>1</sub>-NH<sub>2</sub> to an acrylic acid derivative to form a beta-amino acid derivative which in turn is acylated with a reactive, functional derivative of succinic acid.

Y<sup>+</sup> is a non-metallic salt forming cation suitable for lubricant compositions and the compounds of formula (I) are readily soluble in oils. See page 7, lines 17-23.

The definition "base oil of lubricating viscosity" includes, for example lubricants that may be used for hydraulic or metal-working fluids, greases, gear oils or engine oils. See page 7, lines 22-23.

The above compounds of formula (I) when combined with base oils of lubricating viscosity improve the use properties of said lubricants. As explained in the disclosure on page 1, lines 4-14, oils are frequently admixed with commercially available additive concentrates. Contamination with water, calcium detergents and residues of other lubricants may occur during the mixing process. As a result, the action of the additive components with respect to corrosion is reduced, for example owing to formation of hydrolysis products and precipitation of poorly soluble calcium residues. The precipitation of calcium residue is especially troublesome as these residues can block filter systems.

The compounds of formula (I) surprisingly improve the corrosion protection in lubricant compositions whilst at the same time the formation of precipitation products and residues are reduced.

#### (6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

**1. Claims 4-8 are rejected under 35 USC 103(a) as being unpatentable over Cox, US 4,882,077 in view of Amende, DE 2,054,649.**

**2. Claims 4-6 and 8 are rejected under 35 USC 103(a) as being unpatentable over Kubo, US 5,362,375 in view of Amende.**

#### (7) ARGUMENTS

All claims stand or fall with claim 4.

**1. Claims 4-8 are rejected under 35 USC 103(a) as being unpatentable over Cox, US 4,882,077 in view of Amende, DE 2,054,649.**

Cox discloses metalworking fluids comprising a paraffin oil and an emulsifier but does not disclose the compounds of claim 4-5 and 7.

Examiner looks to Amende which discloses the preparation of a compound by the reaction of an acrylic acid ester and alkylamines such as laurylamine, stearylamine, and oleyl amine, followed by

further reaction with maleic anhydride. On page 6 Amende discloses that succinic anhydride can be used in place of maleic anhydride. Amende discloses that the compound is useful as an emulsifier.

The examiner cites as the motivation to combine these two pieces of virtually unrelated art to the fact that Amende suggests the use of his reaction product as an emulsifier and Cox uses emulsifiers in his metalworking systems. Thus according to the examiner, it would be obvious to one of ordinary skill in the art to use the compound of Amende in the metalworking fluid of Cox.

Examiner agrees that Cox teaches only diesters from adipic acid and other dibasic acids (Col. 4, lines 11-13) but no amides.

Furthermore while Cox teaches any oil-in-water emulsifier may be used in his metal-working fluids (col. 4, lines 20-22), it is desirable that the emulsifier be either anionic or nonionic in nature. Cox gives only two examples of the types of emulsifiers used in his metalworking fluid and these are linear alcohol capped with a fatty acid (nonionic) or a ethoxylated fatty acid (col. 4, lines 41-47). The examples of Cox use only a linear alcohol capped with a fatty acid (nonionic).

Thus there is no direction from Cox to replace either the ester, esters or emulsifiers with the present compounds of formula (I).

Amende describes the addition of primary amines to acrylic acid esters and the subsequent reaction with succinic anhydride and directs the product formed to textile adjuvants. The textile adjuvants of Amende are used as auxiliary agents for textiles, especially polyester fibers, as wetting agents and for detergents and soaps (abstract of Amende). Amende suggests the use of the textile adjuvants as emulsifiers on page 1, second to last line of the disclosure.

However, Amende gives no direction to use his textile adjuvants in a base oil of lubricating viscosity. The appellants point out that there are virtually an unlimited number of emulsifiers. There is nothing in Amende to suggest that his textile adjuvant might be useful as an emulsifier in a base oil of lubricating viscosity.

Although an obviousness finding does not require a precise teaching, a finding of obviousness at a minimum requires an explicit analysis and a reason to combine known elements. Examiner believes the reason to combine would be that the Amende textile adjuvant may be used as an emulsifier and



Cox teaches the use of emulsifiers in metal-working fluids. Appellants respectfully submit, that one skilled in metal-working fluids would not look to Amende to replace the emulsifiers in Cox with the textile adjuvants of Amende. Amende and Cox deal with nonanalogous art (textile adjuvants vs. metalworking fluids).

Examiner has used as his explicit reasoning that Amende refers to his textile adjuvants as "emulsifiers" and Cox's teaches to use "any oil-in-water emulsifiers". Appellants submit that the teachings of the Cox is so broad (any oil-in-water emulsifier) as to give no direction as to which of many possible choices of emulsifiers is likely to be successful other than those specifically suggested in Cox. As the Board is aware, there are virtually an unlimited number of emulsifiers. Examiner has supplied no particular reason why one skilled in the art of metal-working fluid would look specifically to Amende for an alternative emulsifier, in systems completely foreign to those of metal working fluids.<sup>11</sup>

Appellants respectfully aver that the present application unfortunately has served as the blueprint for the argued combination of references.

Furthermore, even if there were a reason to combine these two references (and the applicants avers there is no motivation, teaching or suggestion to combine), the combination of structures of formula (I) with a base oil of lubricating viscosity give advantages that could not have been predicted based on either of the cited references.

A patent for a combination which only unites old elements with no change in their respective functions would be obvious. But the present combination, that is the combination of the compounds represented by formula (I) with a base oil of lubricating viscosity gives lubricant compositions with improved protection against corrosion and good compatibility with calcium ions.

The applicants refer the examiner to the results given on pages 21. This test shows corrosion protection properties according to ASTM D 665 of a formulated oil mixed with seawater and compounds of formula (I).

The combination of compounds of formula (I) with a base oil of lubricating viscosity clearly shows improved corrosion protection. Each test is carried out in duplicate. The base oil without the compounds of formula (I) shows a heavy corrosion rating of 3 (worst possible rating). When the base oil is combined with compounds of formula (I) corrosion ratings of 0 or 1 are seen.

The compounds of formula (I) also show good compatibility with calcium ions. When the test formulations are mixed with distilled water and 30 ppm of calcium in the form of a calcium detergent, examples 2, 4.1-4.5, 4.8, 4.10 and 4.13 show improved filterability to the base formulation.

Thus the combination of the compounds of formula (I) with a lubricant base gives rise to benefits not understood or predicted by either reference such as corrosion protection and calcium compatibility which disproves the examiner's rationale for obviousness. The combination of the emulsifier of Amende in the metal working fluids of Cox do not give predictable results but surprising benefits in light of both references.

The examiner has discounted the results because the claims are directed to any amount of the amide whereas the results are reported for just one concentration of amide.

The appellants respectfully point out that the appellants have made over 39 separate compounds encompassed by formula (I). Over 18 of these compounds were tested for corrosion inhibition properties and filterability in the presence of  $\text{Ca}^{++}$ .

Thus the testing is not simply a showing involving one species, with the claims encompass many species but the appellants have tested multiple species clearly representative of the formula (I).

The compounds of formula (I) were tested at 0.1 mmol/kg concentration which actually gives a tested weight range varying between 300 and 600 ppm or 0.03 to 0.06 wt. %. The results show similar results within the weight range even though the weights are varied by a factor of two. Thus the examiner is incorrect in that the appellants have tested at several weight concentrations.

However, while the weight of amide is varied, the molar concentration is kept the same. The reason each species is tested at the same molar concentration is to derive a fair comparison between the individual species. It makes no sense to compare different molar concentrations against each other in the same test as this would not give the tester any indication of which species might work best.

**2. Claims 4-6 and 8 are rejected under 35 USC 103(a) as being unpatentable over Kubo, US 5,362,375 in view of Amende.**

The applicants believe this rejection to lack merit for similar reasons as explained above in the Cox rejection.

Firstly, Kobo makes one reference to the use of emulsifiers in his oil compositions. There is no suggestion or teaching of what emulsifiers might be useful to him. See col. 4, line 66.

There is no direction within Kubo to look for a particular type of emulsifier.

According to the examiner, Amende supplies the missing claim limitation for formula (I) because Amende refers to his reaction products as emulsifiers. Appellants respectfully point out that there are a great many emulsifiers that Kubo could have chosen.

While the examiner is of the opinion that one skilled in the art would look to Amende, a reference which deals with an unrelated technology area (textile aduvents), and take the specific emulsifier used in this unrelated system and combine with the Kobo Oil systems, the applicants believe this to be a clear case of hindsight analysis by the examiner. Neither reference deals with related technology. Each mention the term "emulsifier" but there is no particular reason why one would select the emulsifier defined in Amende and combine with oil system of Kobo. There are many other emulsifiers which might have more readily come to mind such as emulsifiers which are known for use in oil systems.

As explained above there are many types of emulsifiers, and one would need more than just the identifier of "emulsifier" to look to Amende for combining with the oils of Kobo.

Furthermore, as explained above even if it made sense to combine these two unrelated references, the advantages of the presently claimed combinations are certainly unobvious and not suggested or taught by either cited reference. Unobvious advantages are indicators of unobviousness.

In light of the above discussions, Appellants respectfully submit that the rejections of claims 4-8 have been rebutted and respectfully ask that the rejections be reconsidered and reversed.

Respectfully submitted,



Shiela A. Loggins  
Agent for Appellants  
Reg. No. 56,221  
filed under 37 CFR 1.34(a)

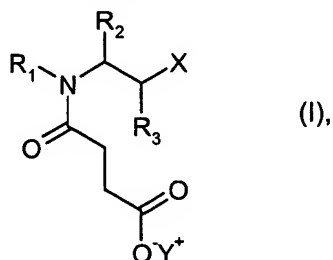
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## (8) CLAIMS APPENDIX

1-3. (cancelled).

4. (previously presented): A composition comprising

a) At least one compound (I),

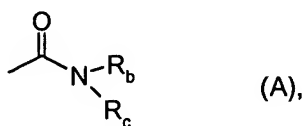


wherein

R<sub>1</sub> is a substituent selected from the group consisting of C<sub>1</sub>-C<sub>22</sub>alkyl, C<sub>3</sub>-C<sub>22</sub>alkyl interrupted by -O-, phenyl, and benzyl;

R<sub>2</sub> and R<sub>3</sub> are hydrogen;

X is derivatised carboxy selected from the group consisting of cyano, carboxy esterified by C<sub>1</sub>-C<sub>22</sub>alkyl, carboxy esterified by C<sub>3</sub>-C<sub>22</sub>alkyl interrupted by -O-, and carbamoyl of the partial formula (A)



defined as piperidinocarbonyl, piperazinylcarbonyl or morpholinocarbonyl; and

Y<sup>+</sup> is a hydrogen ion, ammonium, (C<sub>1</sub>-C<sub>4</sub>alkyl)<sub>1-4</sub> ammonium or (2 hydroxyethyl)<sub>1-4</sub> ammonium;

and

b) A base oil of lubricating viscosity.

5. (previously presented): A composition according to claim 4, comprising

a) At least one compound (I),

wherein

R<sub>1</sub> is a substituent selected from the group consisting of C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>3</sub>-C<sub>18</sub>alkyl interrupted by -O-, phenyl and benzyl;

R<sub>2</sub> and R<sub>3</sub> are hydrogen;

X is carboxy and Y is ammonium, (C<sub>1</sub>-C<sub>4</sub>alkyl)<sub>1-4</sub> ammonium or (2 hydroxyethyl)<sub>1-4</sub> ammonium;  
or

X is carboxylate or derivatised carboxy selected from the group consisting of cyano, carboxy esterified by C<sub>1</sub>-C<sub>18</sub>alkyl, carboxy esterified by C<sub>3</sub>-C<sub>18</sub>alkyl interrupted by -O-, and morpholinocarbamoyl; and

Y is hydrogen, ammonium, (C<sub>1</sub>-C<sub>4</sub>alkyl)<sub>1-4</sub> ammonium or (2 hydroxyethyl)<sub>1-4</sub> ammonium; and

b) A base oil of lubricating viscosity.

6. (previously presented): A composition according to claim 4, comprising

b) A base oil of lubricating viscosity which is used for hydraulic or metal-working fluids, greases, gear oils or engine oils.

7. (previously presented): A concentrate comprising at least one compound (I) wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, X and Y are as defined in claim 4.

8. (previously presented): A method of improving the use properties of lubricants, which comprises adding to the lubricants at least one composition according to claim 4.

(9) EVIDENCE APPENDIX

No evidence is submitted with this Appeal.

(10) RELATED PROCEEDINGS APPENDIX

As the appellants are not aware of any other related proceedings, no copies of decisions rendered by a court or the board are attached.